

REMARKS

The invention provides for synergistic herbicidal combinations comprising specific hydroxylphenylpyruvate dioxygenase inhibitors in combination with at least one second herbicide belonging to one of four classes of herbicides.

Pursuant to 37 C.F.R. 1.136(a), Applicants petition the Assistant Commissioner to extend the time period to file a response by two (2) months, i.e., up to and including May 20, 2003. A check for \$410 is enclosed to cover the cost of the petition. It is believed that no further fee is required. If, however, an additional fee is due, the Assistant Commissioner is authorized to charge such fee, or credit any overpayment, to Deposit Account 50-0320.

Claims 1-16, 18, and 19 are pending. Claims 6, 7, and 10-13 are withdrawn from consideration for being directed to non-elected species.

Claims 1-5, 8, 9, 14-16, 18, and 19 were rejected under 35 USC 112, first paragraph, for allegedly not being enabled by the specification. Applicants respectfully disagree as the specification provides publications that either describe specific compounds or provide methods that could be modified by one skilled in the art to prepare a specific compound.

Applicants respectfully submit that A components are generally known from the prior art references listed in the specification (page 1, line 15-25). WO 97/23135 describes benzoyl pyrazoles; EP-A 0 810 227 describes benzoyl isoxazoles; WO 98/29406 describes benzoyl cyclohexanediones. Furthermore, WO 00/21924 (U.S. Patent No. 6,376,429) describes the elected A component species and their preparation. Applicants, therefore, respectfully request reconsideration and withdrawal of the rejection. It should be noted that Applicants' statement mentioned in the rejection referred to the document relied upon in the rejection under 35 USC 103(a).

Claims 1-5, 8, 9, 14-16, 18, and 19 were rejected under 35 USC 103(a) as allegedly being unpatentable over the combined teachings of Lee et al., Pesticide Science 54, 377-385 (1998) (“Lee”), De Gennaro et al. U.S. Patent No. 6,046,134 (“De Gennaro”), and Nippon Soda (JP 4-20301).

As none of these prior publications disclosed the elected hydroxylphenylpyruvate dioxygenase inhibitor, Applicants urge that the rejection does not establish a *prima facie* case of obviousness. Moreover, even if it were so held, Applicants respectfully submit that the data appended hereto and in the accompanying Declaration of H. Bieringer overcome a holding of obviousness. Accordingly, reconsideration and withdrawal of this rejection are requested.

The rejection relies upon the teachings of Lee to disclose that triketone herbicides are known in the art as inhibitors of hydroxylphenylpyruvate dioxygenase and relies on the teaching of De Gennaro and Nippon Soda to disclose synergistic herbicidal combinations of a triketone herbicide with various secondary herbicides, including nicosulfuron. The rejection concludes that it “would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have combined the triketone herbicides with sulfonylurea herbicides because each class of herbicides was known and it is *prima facie* obvious to combine herbicidal agents” relying on the decision in *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980). Office Action at 4.

Applicants respectfully disagree that the rejection establishes a *prima facie* case of obviousness. None of the prior publications discloses the triketone compounds provided for in the instant claim as the compounds disclosed therein differ in the Z group. As the rejection has not demonstrated herbicidal combinations comprising these compounds exhibit synergistic herbicidal activity, it has not established a *prima facie* case of obviousness.

Moreover, even if it were so held, it is urged that the data appended hereto and in the accompanying Declaration of H. Bieringer establish that the elected composition exhibits unexpected properties.

The Declaration of H. Bieringer presents data that demonstrate that the elected composition shows synergy when compared with the individual components for combating POROL and SORHA. Applicants thank the Examiner for indicating that claim 19 would be allowable over the cited prior art based on the Declaration.

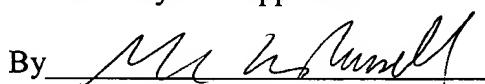
The data appended hereto demonstrate that the inventive compositions of the present application exhibit unexpectedly superior synergistic properties in comparison with the composition described in De Gennaro (see Tables 2 and 3). The data appended hereto also demonstrate unexpectedly superior synergistic properties of additional compositions of the present application (see Tables 5-9).

In view of the foregoing, it is respectfully urged that Applicants have demonstrated that the elected combination exhibits unexpected results, and that the data is commensurate in scope with the claims. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Favorable action is earnestly solicited.

Respectfully submitted,

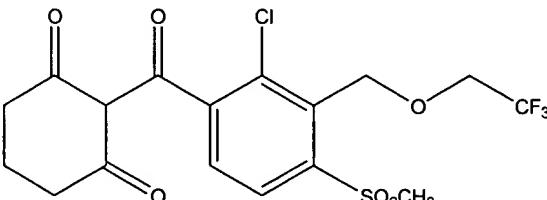
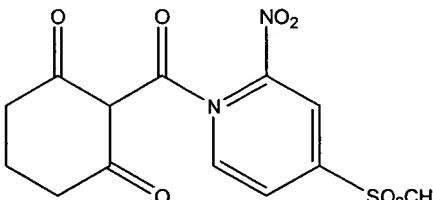
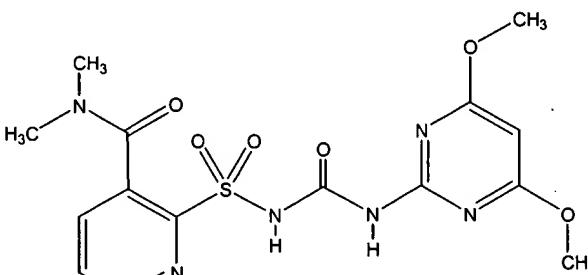
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Enclosure

Tables 1-3 a comparison involving the elected species (A4) and the triketone (mesotrione) disclosed in De Gennaro and data for additional inventive mixtures in tables 4-9.

Table 1: Herbicides used in comparison trials

Compound	
	A4
	mesotrione
	
nicosulfuron	

In the first comparison trial (table 2) the elected species and mesotrione were applied in such a dosage that they reach 90% activity against AMARE. Then, the elected species and mesotrione were mixed with the same amount of nicosulfuron. The results reveal that the mixture according to the invention comprising the elected species and nicosulfuron has better herbicidal activity (100%) than that of mesotrione and nicosulfuron (96%).

Table 2: Herbicidal activity against AMARE

Compound	Dosage [g a.i./ha]	Activity against AMARE
A4	75	90%
A4 + nicosulfuron	75 + 40	100%
mesotrione	105	90%
mesotrione + nicosulfuron	105 + 40	96%

In the second comparison trial (table 30) the elected species, mesotrione and nicosulfuron were applied in the same dosage as in the above mentioned trial. Therein, the mixture according to the

invention comprising the elected species and nicosulfuron has better herbicidal activity (81%) than that of mesotrione and nicosulfuron (50%). Moreover, this trial reveals that the mixture of mesotrione and nicosulfuron known from prior art has a lower herbicidal activity (50%) than mesotrione alone (60%).

This fact gives evidence for nonobviousness of subject matter of present application since one skilled in the art would not expect extraordinarily synergistical effects of mixture according to the invention.

Table 3: Herbicidal activity against DIGSA

Compound	Dosage [g a.i./ha]	Activity against AMARE
A4	75	46%
A4 + nicosulfuron	75 + 40	81%
mesotrione	105	60%
mesotrione + nicosulfuron	105 + 40	56%

Further comparisons

To support the scope of present claims we present results of further comparisons comprising mixtures according to the invention (see tables 5 to 9). Therein, different components A and component B were tested individually and in admixture. These results reveal that mixtures according to the invention show synergistically herbicidal activities which are higher than that those expected (given in brackets and calculated according to the method of Colby).

Table 4: Herbicides used in further comparison trials

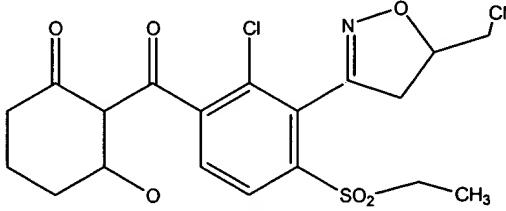
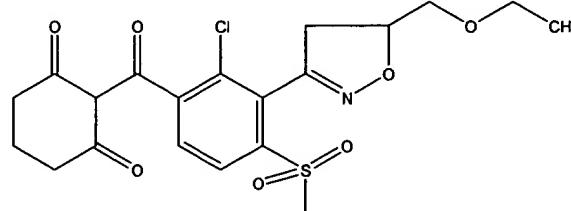
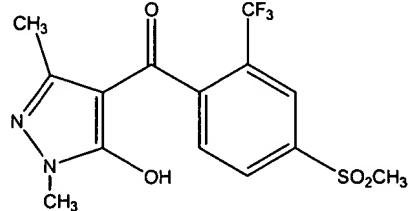
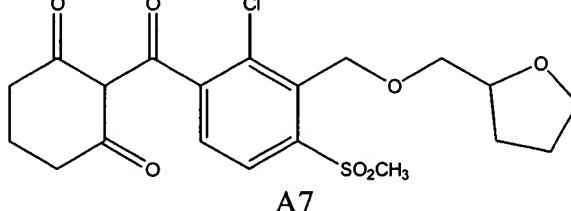
Compound
 A3
 A5
 A6
 A7

Table 5:

Compound	Dosage [g a.i./ha]	Herbicidal activity against weeds			
		SEFTA	SETVI	ABUTH	PHBPU
A3	100	72%	72%	65%	70%
bromoxynil	560	0%	0%	72%	60%
A3 + bromoxynil	100 + 720	96% (72%)	98% (72%)	100% (90%)	95% (88%)

Table 6:

Compound	Dosage [g a.i./ha]	Herbicidal activity against weeds			
		SEFTA	SETVI	ABUTH	PHBPU
A3	100	72%	72%	65%	70%
atrazine	1680	25%	0%	55%	80%
A3 + atrazine	100 + 1680	100% (79%)	98% (72%)	100% (84%)	100% (94%)

Table 7:

Compound	Dosage [g a.i./ha]	Herbicidal activity against weeds	
		IPOSS	AVEFA
A5	50	70%	40%
flufenacet	373	25%	50%
A5 + flufenacet	50 + 373	97% (78%)	95% (70%)
pendimethalin	840	40%	10%
A5 + pendimethalin	50 + 840	97% (78%)	80% (46%)
imazethapyr	30	25%	10%
A5 + imazethapyr	50 + 30	98% (78%)	75% (46%)
iodosulfuron	1	20%	30%
A5 + iodosulfuron	50 + 1	93% (76%)	75% (58%)

Table 8:

Compound	Dosage [g a.i./ha]	Herbicidal activity against weeds	
		DIGSA	POLSS
A6	50	0%	65%
foramsulfuron	30	80%	20%
A6 + foramsulfuron	50 + 30	85% (80%)	95% (70%)

Table 9:

Compound	Dosage [g a.i./ha]	Herbicidal activity against weeds	
		CYPSE	SCPJU
A7	50	30%	55%
anilofos	200	0%	0%
A7 + anilofos	50 + 30	60% (30%)	95% (0%)